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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,951	01/09/2004	Lu Qian	72255/00012	8829

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EXAMINER
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JONES, HUGH M

ART UNIT	PAPER NUMBER
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2128

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/754,951

Applicant(s)

QIAN ET AL.

Examiner

Hugh Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10/23/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 23-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 23-45 of U. S. Application 10/754,951, filed 1/9/2004, are pending.

#### Specification

2. Applicants are thanked for their amendment to the specification. The changes are entered.

#### Claim Rejections - 35 USC § 112

3. Claims 32-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The meaning of *adapted to* is ambiguous.

#### Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. *Claims 23-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berg in view of Ephremides et al..*

7. Berg discloses taking the output of a network simulator and applying it directly to a network (fig. 5 and col. 9, lines 32-45), but supplies few details of the simulator.

8. Ephremides provides said details (as mapped subsequently).

9. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Berg disclosure with the Ephremides teaching because Berg expressly teaches use of a network simulator to control the network (fig. 5 and col. 9, lines 32-45).

10. *Claims 23-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ephremides et al. in view of Almeida et al..*

11. Ephremides discloses a network simulator (as mapped subsequently).

12. Ephremides does not expressly teach using the output of the simulator to control the network.

13. Almeida provides said details (fig. 4, col. 8, lines 5-19) as well as a teaching of the use of historical data (col. 4, lines 4-48).

14. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Ephremides disclosure with the Almeida teaching for the advantages disclosed by Almeida (Col. 2, lines 35-50).

15. Specifically, Ephremides discloses:

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23. A method comprising the steps of (abstract; fig. 1; line 35, col. 2 to line 22, col. 1):

receiving configuration data representative of a current configuration of an associated wireless local area network (fig. 1 # 102; fig. 3 "initial");

receiving characteristic data representative of at least one characteristic associated with the wireless local area network (fig. 1 # 102; fig. 3 "initial");

receiving optimization data representative of at least one optimization parameter (fig. 1 # 104, 106, 108, 110);

generating an optimal configuration data representative of an optimal configuration of the wireless local area network in accordance with the received configuration data, the characteristic data, and the optimization data (fig. 1 # 104, 106, 108, 110); and

dynamically modifying the current configuration of the associated wireless local area network in accordance with the generated optimal configuration data (fig. 1 # 104, 106, 108, 110, - # 112 - the results are applied to reconfigure the system).

24. The method of claim 23, wherein the step of generating optimal configuration data further comprises the step of applying an optimization algorithm to the optimization data (fig. 1 # 110; col. 6, lines 1-41; reference 8, incorporated in col. 2).

25. The method of claim 24, wherein the optimization algorithm is at least one of the group consisting of Newton's method and gradient search (col. 6, lines 1-41; reference 8, incorporated in col. 2).

26. The method of claim 23, the generating step further comprising performing at least one discrete event simulation in accordance with the received configuration data, the characteristic data, and the optimization data (fig. 1).

27. The method of claim 23, wherein the generating step further comprises simulating a network configuration with a discrete event driven medium access control protocol simulator (fig. 1).

28. (New) The method of claim 23, further comprising the step of displaying, via an associated display, graphical data representative of the generated optimal configuration data (fig. 3-7).

29. The method of claim 23, further comprising simulating one of a group consisting of throughput, noise mitigation, access point loading, voice distribution, data distribution propagation effects, transmit power, receiver sensitivity and adjacent channel interference (fig. 1, #104, 106; col. 3, lines 1-22).

30. The method of claim 23, further comprising simulating a plurality of a group consisting of throughput, noise mitigation, access point loading, voice distribution, data distribution propagation effects, transmit power, receiver sensitivity and adjacent channel interference (fig. 1, #104, 106; col. 3, lines 1-22).

31. The method of claim 23, wherein the at least one optimization parameter is based on historical usage data associated with the wireless local area network (fig. 5 #502).

32. A system comprising (fig. 1 # 104, 106, 108, 110, - # 112 – the results are applied to reconfigure the system):

means adapted for receiving configuration data representative of a current configuration of an associated wireless local area network (fig. 1 # 104, 106, 108, 110);

means adapted for receiving characteristic data representative of at least one characteristic associated with the wireless local area network (fig. 1 # 104, 106, 108, 110);

means adapted for receiving optimization data representative of at least one optimization parameter (fig. 1 # 104, 106, 108, 110);

simulating means adapted for generating optimal configuration data representative of an optimal configuration of the wireless local area network in accordance with the received configuration data, the characteristic data, and the optimization data coupled to the means adapted for receiving configuration data (fig. 1 # 104, 106, 108, 110), the means adapted for receiving characteristic data (fig. 1 # 104, 106, 108, 110) and

the means adapted for receiving optimization data (fig. 1 # 104, 106, 108, 110);  
and

means adapted for dynamically modifying the current configuration of the associated wireless local area network responsive to the simulating means in accordance with the generated optimal configuration data (fig. 1 # 104, 106, 108, 110).

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33. The system of claim 32, wherein the simulating means further comprises application means adapted for applying an optimization algorithm to the optimization data (col. 6, lines 1-41; reference 8, incorporated in col. 2).

34. The system of claim 33, wherein the optimization algorithm is at least one of the group consisting of Newton's method and gradient search (col. 6, lines 1-41; reference 8, incorporated in col. 2).

35. The system of claim 32, further comprising communication means adapted for communicating the optimal configuration data to a management tool (fig. 1 # 104, 106, 108, 110).

36. The system of claim 32, wherein the simulation means comprises means adapted for performing a discrete event driven medium access control protocol simulation in accordance with the received configuration data, the characteristic data, and the optimization data (fig. 1 # 104, 106, 108, 110).

37. The system of claim 32, further comprising display means adapted for displaying graphical data representative of the generated optimal configuration data (fig. 3-7).

38. The system of claim 32, further comprising means for receiving the at least one optimization parameter from an associated user (fig. 1, 3-7).

39. The system of claim 32, wherein the at least one optimization parameter is historical usage data associated with the wireless local area network (fig. 5 #502).

40. An apparatus comprising (abstract; fig. 1; line 35, col. 2 to line 22, col. 1):  
a management tool communicatively coupled to an associated wireless local area network for managing and modifying the associated wireless local area network, the management tools is configured to receive configuration data representative of a current configuration of the associated wireless local area network and to receive characteristic data representative of at least one characteristic of the associated wireless local area network (fig. 1 # 104, 106, 108, 110);

a simulator for simulating at least one configuration of the associated wireless local area network (fig. 1 # 104, 106, 108, 110);

an interface device configured to facilitate data communication between the management tool and the simulator (fig. 1 # 104, 106, 108, 110);

a receiving device for receiving optimization data representative of at least one optimization parameter (fig. 1 # 104, 106, 108, 110),

wherein the configuration data, the characteristic data, and the optimization data are sent to the simulator from the management tool via the interface device, and the simulator is responsive to generate optimal configuration data representative of an optimal configuration of the associated wireless local area network in accordance with the received configuration data, the characteristic data, and the optimization data (fig. 1 # 104, 106, 108, 110); and

wherein the simulator is configured to continually receive the characteristic data and continually updates and dynamically modifies the optimal configuration of the associated wireless local area network (fig. 1 # 104, 106, 108, 110).

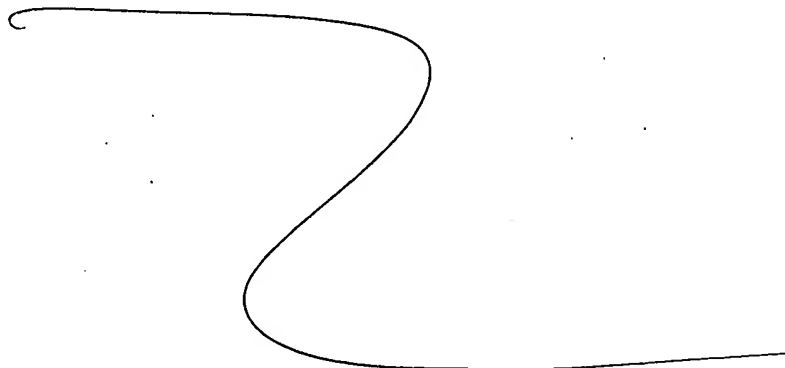
41. The apparatus of claim 40, wherein the simulator applies an optimization algorithm to the optimization data (col. 6, lines 1-41; reference 8, incorporated in col. 2).

42. The apparatus of claim 41, wherein the optimization algorithm is at least one of the group consisting of Newton's method and gradient search (col. 6, lines 1-41; reference 8, incorporated in col. 2).

43. The apparatus of claim 40, wherein the simulator is a discrete event driven medium access control protocol simulator (fig. 1).

44. The apparatus of claim 40, further comprising a transmission device for transmitting the optimal configuration data to the management tool, wherein the management tool dynamically modifies the current configuration of the associated wireless local area network in accordance with the generated optimal configuration data (fig. 1, #104, 106; col. 3, lines 1-22).

45. The apparatus of claim 40, wherein the simulator is configured to simulate one of the group consisting of throughput, noise mitigation, access point loading, voice distribution, data distribution propagation effects, transmit power, receiver sensitivity and adjacent channel interference (fig. 1, #104, 106; col. 3, lines 1-22).





**Response to Arguments**

16. Applicant's arguments, filed 10/23/2006, have been carefully considered but are not persuasive. Applicants are thanked for the amendment.

17. Applicant's arguments with respect to the 101 and 112 rejections are persuasive and the rejections are withdrawn with one exception. Applicants state that the new claims do not recited "adapted"; however please review claims 32-39.

18. Applicant's arguments with respect to the art are not persuasive.

Applicant's arguments against Berg appear to be speculation and do not address the cited sections. As per the argument, it is not clear why one would want to necessarily optimize a system that is already optimized. Applicant's arguments against Ephremides appear to be piecemeal, rely upon speculation and do not address the cited sections. Applicant's arguments against Almeida appear to be speculation and do not address the cited sections.

**Conclusion**

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

20. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**21. Any inquiry concerning this communication or earlier communications from the examiner should be:**

directed to: Dr. Hugh Jones telephone number (571) 272-3781,

Monday-Thursday 0830 to 0700 ET,

**or**

the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

**mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**


(703) 308-9051 (for formal communications intended for entry)

**or** (703) 308-1396 (for informal or draft communications, please label *PROPOSED* or *DRAFT*).

Dr. Hugh Jones

Primary Patent Examiner

December 2, 2006

  
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